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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Xiangrong Cai

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03/18/2008

Anderson Gorecki & Manaras LLP

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EXAMINER

PHAN, TUANKHANH D

ART UNIT

PAPER NUMBER

2153

NOTIFICATION DATE

DELIVERY MODE

03/18/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/784,757	Applicant(s) CAI, XIANGRONG	
	Examiner TUAN-KHANH PHAN	Art Unit 2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment, filed on 1/17/2008, has been entered and acknowledged by the Examiner. Claims 1-16 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph because it recites a negative limitation, "not processing," that rendered the claim indefinite.

Response to Arguments

Applicant's arguments filed on 1/17/2008 have been fully considered but they are not persuasive.

Applicant argues that "delaying queries on those access ports having active senders would reduce the problem but not solve it" of Haggerty is irrelevant to the presently claimed invention because (1) it has nothing to do with delaying removal of a member (nor delaying forwarding of a PIM prune message); and (2) it specifically states that delaying does not solve the problem.

Response: Haggerty, in fact, does teach the delaying the removal of a member and delaying forwarding of a PIM prune message. Haggerty discloses delaying the removal and forwarding by resetting the timer (col. 19, line 40); thus, it causes message flow arriving are forwarded (col. 19, line 58) upstream after the delay timer is up. It affects the membership report to be restored on the sniffed port and forwarding packets

to the outports/receivers (col. 19, lines 62-65). By stating that delay of queries does not solve problem, it setups the delay timer to effectively solve the problem to delay membership removal as well as to delay forwarding a message as discussed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watkinson in view of Haggerty et al. (US Pat. 6,331,983).

Regarding claims 1, 6, 10 and 16, Watkinson teaches a method of maintaining consistent group membership data (i.e. **membership information to a group and the group relates to a services**, abstract) at a Designated Router (e.g. **104A is a designated router**, col. 6, lines 44-45) executing the Protocol Independent Multicast (PIM) protocol (i.e. **generating a corresponding PIM from the IGMP request**, col. 6, lines 20-25) including the steps of:

receiving, at the Designated Router, an IGMP membership message (i.e. **receiving the request related to membership change to a group is a form of an IGMP membership message**) from an IGMP host (col. 5, lines 35-42) operating according to the Internet Group Multicast Protocol (IGMP) protocol (col. 5, lines 35-42);

translating the IGMP membership message into a PIM membership message (i.e. translating IGMP message into PIM, col. 5, lines 10-20); and selectively forwarding (i.e. **router 104A forwards the request towards the source of the network**, col. 4, lines 45-49) the PIM membership message to a device upstream from the Designated Router (i.e. **designated router 104A forwards upstream [route toward the source] to the intended program** col. 4, lines 45-49; col. 6, lines 53-56), but does not explicitly teach delaying forwarding a PIM prune message in response to an IGMP Leave if the Designated Router is In the upstream path from the IGMP host.

However, in the same field of endeavor of IGMP membership message, Haggerty et al. disclose delaying forwarding a PIM prune message in response to an IGMP Leave if the Designated Router is In the upstream path from the IGMP host (**causing to reset the timer for forwarding message so that the sending and receiving of messages can be delayed**, col. 19, lines 34-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the resetting the timer for forwarding of GMP membership message taught by Haggerty et al. into the IGMP membership message taught by Watkinson to avoid taking down connections when it's meant to do so such that flowing of messaging is smoothly carried out.

Regarding claim 2, Watkinson further teaches the method according to claim 1, wherein the step of selectively forwarding further includes the steps of: determining whether the designated router is upstream from the host device (i.e. **determine the**

outgoing to reach address that's leading towards router; upstream is the same as determining whether the designated router is routed toward the source; col. 8, lines 3-18); and responsive to a determination that the designated router is upstream from the host device, modifying an entry in a PIM routing table associated with the IGMP host (i.e. **the method updating forwarding table associated with the group to reflect the request;** col. 2, lines 20-22) responsive to the IGMP membership message (i.e. **Group/source table that includes membership message needs to be updated upon any changes;** col. 7, lines 10-45).

Regarding claim 3, Watkinson teaches the method according to claim 2, wherein the IGMP membership message indicates that a member is joining a multicast group (i.e. **IGMP construct a multicast protocol,** col. 2, lines 38-43), and the step of modifying includes the step of generating and storing a PIM entry in a multicast routing table responsive to information in the IGMP membership message (col. 5, lines 35-50; col. 6, lines 15-35).

Regarding claim 4, Watkinson teaches the method of claim 1, Haggerty et al. teach the IGMP membership message is a Report message, including an identifier and network interface for a member of a group, and where the step of translating translates the Report message into a PIM Join message (col. 5, lines 1-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the IGMP membership message as a report message taught by Haggerty et al. into the IGMP membership message taught by Watkinson to frequently distribute all addresses to the group multicast address.

Regarding claim 5, Watkinson teaches the method of claim 1, wherein the IGMP membership message is a Leave message, indicating an identifier and network interface for a member leaving a group, and wherein the step of translating converts the Leave message to a PIM Prune message (col. 6, lines 64-67).

Regarding claim 7, Watkinson teaches the method of claim 6, wherein the step of selectively forwarding the PIM membership message operates in response to whether the entry exists in the routing table and in response to whether the designated router is upstream from the IGMP Host device (i.e. **determine the outgoing to reach address that's leading toward router; upstream is the same as determining whether the designated router is routed toward the source**; col. 8, lines 3-18).

Regarding claim 8, Haggerty et al. further teach the step of delaying removal of the member from the group at the designated router for a predetermined time period (col. 19, lines 25-35).

Regarding claim 9, Watkinson further teaches wherein the designate router forwards the PIM membership message on the network interface on which the IGMP membership message is received (col. 6, lines 25-30).

Regarding claim 11, Watkinson further teaches responsive to whether the PIM membership message is addressed to the Router (col. 6, lines 40-50).

Regarding claim 12, Watkinson teaches the method according to claim 11, further including the step of only forwarding the PIM membership message if the PIM message is addressed to the Router and an entry is stored in the routing table (col. 7, lines 1-25).

Regarding claim 13, Haggerty et al. further teach IGMP host is downstream from the router (i.e. **either upstream or downstream**, col. 18, lines 21-29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the IGMP message sent downstream taught by Haggerty et al. into IGMP host message taught by Watkinson to detect the presence of active attached multicast routers both directions (Watkinson, col. 18, lines 29-33).

Regarding claims 14-15, Watkinson teaches the method according to claim 10, Haggerty et al. further teach the step of suppressing forwarding of the PIM membership message in response to the entry being stored in the routing table and the IGMP Host not being downstream from the Router (col. 18, lines 21-29).

Conclusion

Examiner's Note: Examiner has cited particular paragraphs, figures, columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN-KHANH PHAN whose telephone number is (571)270-3047. The examiner can normally be reached on Mon to Fri, 8:00am to 4:30pm EST, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton B. Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2153

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TKP

/Glenton Burgess/

Supervisory Patent Examiner, Art Unit 2153